

Appl. No. 10/626,290
Amdt. dated October 4, 2004
Reply to Office Action of 07/02/2004
Attorney Docket No. 1455-031353

Amendments to the Specification:

Please replace the paragraph beginning at page 5, line 25, with the following rewritten paragraph:

--When the saw blade 10 is continuously rotated at a high speed of several thousand RPM to cut the workpiece in a dry cutting fashion, the shank 11 of the saw blade 10 is heated to a temperature of several ~~hundreds~~ hundred degrees. When the shank 11 of the saw blade 10 is instantaneously heated as mentioned above, the strength of the shank is decreased even though the shank is made of alloy steel. Consequently, the shank 11 of the saw blade 10 vibrates from side to side. When the shank 11 of the saw blade 10 vibrates widely, the shank 11 may be broken or the cutting tips 14 attached to the outer circumference of the shank 11 may be broken off from the shank 11 of the saw blade 10 with the result that ~~a-accident~~ an accident may be caused, for example, an operator of the saw blade may be injured in the course of cutting the workpiece.--

Please replace the paragraph beginning at page 8, line 6, with the following rewritten paragraph:

--When the frictional load is caused as mentioned above, the cutting speed of the saw blade, which is the most important factor in a small tool, is decreased. Furthermore, the shank is worn and heated due to continuous friction between the shank and the workpiece, whereby the shank may be deformed due to the forces during the cutting work. The result is that ~~a-accident~~ an accident may occur, occur.

Please replace the paragraph beginning at page 9, line 5, with the following rewritten paragraph:

--In accordance with the present invention, the above and other objects can be accomplished by the provision of a saw blade comprising: a disc-shaped shank having an insertion hole formed at the center thereof so that a rotating shaft of ~~an-powered~~ a powered tool is inserted through the insertion hole of the shank, and wave-shaped portions formed over a prescribed portion of the radius of the disc-shaped shank, the wave-shaped portions being spaced a prescribed distance from each other and alternately arranged on the front and rear surfaces of the disc-shaped shank, the prescribed portion of the radius of the disc-shaped shank being at a distance from the

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center of the insertion hole; and a plurality of cutting tips attached to the outer circumference of the shank for cutting a workpiece, the cutting tips containing particles of high hardness.--

Please replace the paragraph beginning at page 20, line 18, with the following rewritten paragraph:

--Furthermore, the cutting tests for the conventional saw blade having a straight shank and the wave saw blade of the present invention were carried out. The specification of each of the tested saw blades were was as follows: The thickness of the cutting tip was 3.2 mm, and the length of the cutting tip was 40 mm. 100% cobalt was used as a bond, and a compound of 50% of a diamond product having a grain size of 40/50 and a concentration of 23, which was manufactured and sold under the trademark of ISD-1650 by ILJIN Diamond Co., Ltd. in Korea, and 50% of another diamond product having a grain size of 30/40 and a concentration of 23, which was the same grade as the ISD-1650 diamond product, was used as a super-abrasive material. The cutting tips were attached to the outer circumference of the shank by laser welding. A concrete sample having a compression strength of approximately 300 kgf/cm² was used as the workpiece. The saw blade was manually moved at a cross feed of 35 mm. The workpiece was cut by units of 30 cm in length, and the cutting processes were repeated 50 times so that the cut length of the workpiece amounted to 15 m. The results of the cutting tests showed that the cutting speed of the conventional saw blade was 733 cm²/min, and the cutting speed of the wave saw blade having the ring-shaped wave shank of the present invention was 896 cm²/min. As can be seen from the results of the cutting tests, the cutting speed of the wave saw blade of the present invention is 22% faster than that of the conventional saw blade.--

Please replace the paragraph beginning at page 23, line 2, with the following rewritten paragraph:

--The present invention also provides a saw blade whose mechanical strength is considerably increased. Consequently, the shank does not vibrated vibrate from side to side even though the shank is subject to a temperature of several hundred degrees caused by the friction between the shank rotating at high speed and the workpiece, and accumulation of fatigue on the saw blade is prevented.--

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Please replace the paragraph beginning at page 23, line 9, with the following rewritten paragraph:

--With the saw blade of the present invention, it is possible to cut the workpiece while the shank of the saw blade is maintained straight even when it is continuously used in a dry cutting fashion, whereby the cutting speed of the saw blade is faster. Also, the vibration of the shank of the saw blade from side to side is prevented, whereby the cutting tips attached to the outer circumference of the shank of the saw blade are not broken off from the shank of the saw blade with the result that ~~a accident~~ an accident cannot occur.--